

Name: \_\_\_\_\_

For Teacher Use Only:

Minutes \_\_\_\_\_

Approved \_\_\_\_\_

## Lab: Statue of Liberty Corrosion Lab Credit Sheet

Answer the following questions with thoughtful, detailed answers in complete sentences. Cite specific examples from your observations and results of the lab activity.

1. a) Rewrite the chemical equation for the action of oxygen on copper, but now substitute in the chemical formula for copper (II) oxide and balance the equation.  
  
b.) Write the oxidation states above each individual element in the equation you just wrote.  
  
c.) Write the oxidation and reduction half-reactions for the reaction you wrote.
  
- 2.) a.) Was the penny wrapped in iron wire more or less corroded than the unwrapped penny?  
  
b.) Is this corrosion protection via the “coating” technique or the “sacrificial metal” technique? What observations led you to your choice?  
  
c.) The Statue of Liberty was becoming so weak from the corrosion of the copper that it was shut down and “refurbished” in the early 1980’s. In the process, many iron bands were added to the inside of the statue, making direct contact with the copper. These bands are now regularly checked and replaced as needed. Based on Table J, explain why this chemical trickery works to prevent the further oxidation of the copper statue.